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W. Briefing

DD/S&T 5952-65

17 December 1965

**MEMORANDUM FOR: Deputy Director for Science and Technology
Director of Computer Services
Director of Research and Development
Deputy Director of Research and Development**

SUBJECT : Address on Information Retrieval

1. Dr. Vincent Giuliano, a member of the Senior Staff Operations Group of Arthur DeLittle, Inc., discussed "The Fact and Fancy of Information Retrieval" at the Washington Academy of Sciences meeting, 16 December 1965. In addition to working as a Arthur DeLittle consultant on the design of information retrieval systems, Dr. Giuliano is also a researcher in mathematical linguistics. A number of facts which he presented may be of interest:

The number of journals and periodicals is somewhere between 10,000 and 25,000, of which 5,000 - 10,000 are devoted to science and technology.

There are between 2,000 and 6,000 special libraries or information services devoted to science and technology. Some of these, of course, are very small and limited in scope.

About 150 - 200 institutions now employ some degree of automatic processing or retrieval.

NASA distributes its tapes (I believe these contain abstracts and key words for search) to 25 users.

The NASA vocabulary has 19,000 terms.

The Government spends about \$200,000,000 per year in processing scientific and technological information.

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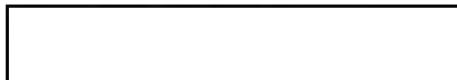
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Considerable progress is being made in automatically abstracting or extracting from articles.

Regardless of the large vocabulary, semantic problems occur if information on "combustion instability", for example, is searched as "flame oscillation". Dr. Giuliano is personally working on associative retrieval in which the equivalent of a thesaurus may be automatically compiled from the sentence structural relationships of various terms which have similar meanings, i. e., flame is similar to combustion, and oscillation is similar to instability.

Dr. Giuliano is personally frustrated by his ability to retrieve far more information pertaining to his special field than he can assimilate into his thinking and conceptualizing processes.



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